

REMARKS

The present Amendment amends claims 1, 2 and 4, leaves claims 5 and 6 unchanged and cancels claim 3. Therefore, the present application has pending claims 1, 2 and 4-6.

Claim 1 stands rejected under 35 USC §103(a) as being unpatentable over Agarwal (U.S. Patent Application Publication No. 2004-0042420) in view of Murakami (U.S. Patent No. 6,084,889); claims 3 and 6 stand rejected under 35 USC §103(a) as being unpatentable over Agarwal and Murakami in view of Masuda (U.S. Patent No. 6,314,098); and claims 4 and 5 stand rejected under 35 USC §103(a) as being unpatentable over Agarwal and Murakami in view of Brueckheimer (U.S. Patent No. 6,731,635). As indicated above, claim 3 was canceled. Therefore, these rejections with respect to claim 3 are rendered moot. These rejections with respect to the remaining claims are traversed for the following reasons. Applicants submit that the features of the present invention as now more clearly recited in claims 1, 2 and 4-6 are not taught or suggested by Agarwal, Murakami, Masuda or Brueckheimer whether taken individually or in combination with each other as suggested by the Examiner. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw these rejections.

Amendments were made to claim 1 from claims 2 and 4-6 depend so as to more clearly recite that the present invention provides a multiplexing apparatus as, for example, illustrated in Fig. 2 of the present application including a plurality of terminal interface units each accommodating a line on a terminal side, a priority control sub-unit which connects the terminal interface units and a network interface

unit connected to the priority control sub-unit wherein the network interface unit accommodates a line on a network side.

According to the present invention, each of the terminal interface unit converts data received from the line on the terminal side to a data block such as a packet which is determined a protocol adopted in the network and transmits the packet type data to the priority control sub-unit wherein each of the terminal interface unit differs from the packet type data received from the priority control sub-unit and extracts data to transmit the data onto the corresponding line of the terminal side.

The priority control sub-unit includes a plurality of packet type data storing units in corresponding relationship to the terminal interface units for storing the packet type received from the terminal interface units. The priority control sub-unit reads out the packet data sequentially in a predetermined order from the packet type data storing unit to transmit the packet type data to the network interface unit, stores in the packet type data storing units into conformity with the destination of the packet type data received from the network interface units and transmits the packet type data to the terminal interface unit into conformity with the destination of the packet type data being received.

The network interface unit synchronizes the packet type data received from the priority control sub-unit with the line and the network side to transmit the synchronized packet type data to the line on the network side and transmits the packet type data received from the line on the network side to the priority control sub-unit.

Thus, according to the present invention by use thereof, the present invention attains a function to decrease of the size of the circuit of the multiplexing apparatus relative to conventional apparatus so that the multiplexing apparatus of the present invention is provided with a plurality of terminal interfaces and allows communication between a plurality of terminals and a single network line.

The above described features of the present invention now more clearly recited in the claims are not taught or suggested by any of the references of record whether taken individually or in combination with each other. Particularly, the above described features are not taught or suggested by Agarwal, Murakami, Masuda or Brueckheimer whether taken individually or in combination with each other as suggested by the Examiner.

Agarwal teaches, for example, a buffer unit which relays data exchanged between an ATM line interface and a wide area network (WAN) line interface. The Examiner's attention is directed to Fig. 2d of Agarwal. As illustrated in Fig. 2d of Agarwal an ATM line interface 1001 is connected to an ATM network and a WAN line interface 1009 is connected to a WAN and packets are routed between the ATM line interface 1000 and the WAN 1009 via the various elements including, for example, the section routing 1003, transmission routing 1017, the output priority queues 1005, the input priority queues 1014, etc.

The present invention differs from that taught by Agarwal being that the present invention provides a cell multiplexing apparatus having a plurality of terminal interface units, a priority control sub-unit and a network interface unit. There is no

teaching or suggestion in Agarwal of the priority control sub-unit, the terminal interface unit nor the functions performed by such units as recited in the claims.

For example, in the present invention, the terminal interface unit converts data received from the line on the terminal side to a data block and transmits packet type data to the priority control sub-unit after and disassembles packet type data received from the priority control sub-unit and extracts data to transmit data onto the corresponding line on the terminal side.

The priority control sub-unit according to the present invention includes a plurality of packet data type storing unit in corresponding relation with the terminal interface units for storing the packet type data received from the terminal interface units and reading out the packet type data sequentially in a predetermined order from the packet type data storing unit so as to transmit the packet type data to the network interface unit. In addition, the priority control sub-unit stores in the packet type data storing unit in accordance with a destination of the packet type data received from the network interface and transmits the packet type data to the terminal interface unit in conformity with the destination of the packet type data being received.

The above described features of the present invention are clearly not taught or suggested by Agarwal.

Thus, Agarwal fails to teach or suggest a terminal interface unit each
converting data received from the line on the terminal side to a data block,
transmitting the packet type data to the priority control sub-unit, disassembling
packet type data received from the priority control sub-unit and extracting data from

the disassembled packet type data so as to transmit the data onto the corresponding line on the terminal side as recited in the claims.

Further, Agarwal fails to teach or suggest a priority control sub-unit which includes a plurality of packet type data storing unit in corresponding relation to the terminal interface unit for storing the packet type data received from the terminal interface unit wherein the priority control sub-unit reads out the packet type data sequentially in a predetermined order from the packet type data storing unit to transmit the packet type data to the network interface unit, stores in the packet type data storing unit in conformity with the destination of the packet type data received from the network interface unit and transmits the packet type data to the terminal interface unit in conformity with the destination of the packet type data being received as recited in the claims.

Even further, Agarwal fails to teach or suggest a network interface unit which synchronizes the packet type data received from the priority control sub-unit with the line on the network side to transmits the synchronized packet type data to the line on the network side and transmits the packet type data received on the line on the network side to the priority control sub-unit as recited in the claims.

Therefore, as is quite clear from the above, the features of the present invention as now more clearly recited in the claims are not taught or suggested by Agarwal.

The above noted deficiencies of Agarwal are not supplied by any of the other references of record whether taken individually or in combination with each other.

Particularly, the above described features of the present invention are not taught or suggested by Murakami, Masuda or Brueckheimer.

Murakami teaches an ATM multiplexing apparatus such as that illustrated, for example, in Figs. 1 and 2. However, at no point is there any teaching or suggestion in Murakami of the above described features of the present invention as recited in the claims with respect to the terminal interface units, the priority control sub-unit and the network interface units.

The same deficiencies can be found in Masauda and Brueckheimer. Therefore, combining the teachings of Agarwal with one or more of Murakami, Masuda and Brueckheimer still fails to teach or suggest the features of the present invention as now more clearly recited in the claims.

Thus, based on the above, it is quite clear that the each of the references of record namely, Agarwal, Murakami, Masuda and Brueckheimer, are deficient of the same features of the present invention as now more clearly recited in the claims. Therefore, combining Agarwal with one or more of Murakami, Masuda and Brueckheimer does not render obvious the features of the present invention as now more clearly recited in the claims. Accordingly, reconsideration and withdrawal of the above described rejections of the claims under 35 USC §103(a) is respectfully requested.

The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the references utilized in the rejection of claims 1-6.

In view of the foregoing amendments and remarks, applicants submit that claims 1, 2 and 4-6 are in condition for allowance. Accordingly, early allowance of claims 1, 2 and 4-6 is respectfully requested.

To the extent necessary, the applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C., Deposit Account No. 50-1417 (566.39642X00).

Respectfully submitted,

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